DOCUMENT RESUME

ED 386 455 SP 036 217

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TITLE The Effects of Teacher Educational Attainment on Student Educational Attainment in Four Regions of Virginia: Implications for Administrators.
PUB DATE 9 Nov 94
NOTE 14p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (Nashville, TN, November 8-11, 1994).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Academic Achievement; Doctoral Degrees; *Dropout Prevention; *Graduate Study; Masters Degrees; Public Schools; School Districts; *School Holding Power; Secondary Education; Secondary School Teachers; *Teacher Certification; Teacher Education; *Teacher Influence; *Teacher Qualifications
IDENTIFIERS *Virginia

ABSTRACT

Because of increased pressure on schools and teachers to provide environments more conducive to decreasing student attrition rates, the purpose of this study was to investigate the effects of teachers who have achieved postgraduate certification on the number of students who drop out and those who continue their education after graduation in Virginia's school systems. Data were taken from 134 public school systems reporting for the 1991-92 school year. The instructional personnel with postgraduate certification included principals, assistant principals, teachers, and supervisory and supportive personnel. The student population was taken from figures provided for numbers of dropouts in grades 7-12 and numbers of graduates continuing their education. Chi-square test of homogeneity, or independence, was significant in each of the four geographic regions for each test. In the northwest and southwest regions, however, there were fewer degrees of freedom and less significance due to the smaller, more rural systems with fewer teacher and students than in the eastern systems. Results of the study suggest that school systems may increase student grade level attainment through employment of teachers with postgraduate certification or by encouraging present employees to attain higher educational levels themselves. It also suggests a need for further research in a variety of settings to further substantiate these findings. (Author/JB)

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ED 386 455

THE EFFECTS OF TEACHER EDUCATIONAL ATTAINMENT ON STUDENT EDUCATIONAL ATTAINMENT IN FOUR REGIONS OF VIRGINIA: IMPLICATIONS FOR ADMINISTRATORS

A paper presented

to the

1994 Annual Meeting of the

Mid-South Educational Research Association

November 9, 1994

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"THE EFFECTS OF TEACHER EDUCATIONAL ATTAINMENT ON STUDENT EDUCATIONAL ATTAINMENT IN FOUR REGIONS OF VIRGINIA: IMPLICATIONS FOR ADMINISTRATORS"

Sandra L. Sanders, Selene D. Skonie-Hardin, William H. Phelps, and Thom L. Minnis, East Tennessee State University

Because of increased pressure on schools and teachers to provide environments more conducive to decreasing student attrition rates, the purpose of this study was to investigate the effects of teachers who have achieved postgraduate certification on the numbers of students who drop out and those who continue their education after graduation in Virginia's school systems. Data were taken from 134 public school systems reporting for the 1991-92 school year.

Chi-square test of homogeneity, or independence, ($\alpha < .05$) was significant in each of the four geographic regions for each test. In the northwest and southwest regions, however, there were fewer degrees of freedom and less significance due to the smaller, more rural systems with fewer teachers and students than in the eastern systems.

Results of the study suggest that school systems may increase student grade level attainment through employment of teachers with postgraduate certification or by encouraging present employees to attain higher educational levels themselves. It also suggests a need for further research in a variety of settings to further substantiate these findings.

The Effects of Teacher Educational Attainment on Student Educational Attainment in Four Regions of Virginia: Implications for Administrators

Student attrition rates are a major concern of most school systems throughout the world today. Much effort has been spent seeking new ways to lower dropout rates among secondary school students and encouraging them to pursue further study after graduation from high school. Previous studies have concentrated on identifying causal factors such as teacher/pupil ratios, lack of appropriate financing for school systems, or identifiable problems in the students' home environment. However, little investigation has been done into the direct influence a teacher may have in encouraging a student to remain in school or to continue education after high school.

Pressure is mounting for administrators to develop innovative methods for lowering dropout rates and increasing student retention in our schools today. This project is based on the theory that teachers who have a personal enthusiasm for continuing their own education will encourage this same enthusiasm in their students. The study investigates the often casually mentioned effects of teachers who have achieved postgraduate certification on the numbers of students who

drop out and on those who pursue further study after graduation in four geographic regions in the state of Virginia.

Definitions

Postgraduate Certification-- A five-year renewable certification granted to a teacher who has qualified by successfully teaching for at least three years in an elementary, middle, or secondary school and who holds an appropriate graduate degree.

Dropout--A pupil in grades 7 through 12 and ungraded pupils ages 12 and older who withdraw from school for reasons other than promotion, transfer, death, or graduation, and do not enter another school during the school year. It also includes students who are in attendance on the last day of the school year but who do not return to school by October 31 of the following school year.

Further Study--Four-year or two-year colleges, business, trade/technical schools, or apprenticeship programs.

These definitions, along with the data to be tested, are published in Virginia's Educational Disparities, an annual publication of the Research Division of the Virginia Educational Association.

Review of Literature

Literature focusing on effects of teacher educational achievement

on levels of student achievement is virtually nonexistent, and much of the available literature on dropout and retention rates is based upon studies conducted in postsecondary settings. One study of note, the Stern-Williams (1986) report for the Center for Educational Statistics, highlights teacher/student ratios and teacher salaries as major contributors to the dropout rate and achievement levels. Seyfarth (1988) agrees but indicates that policymakers do not often perceive lowering of ratios as producing higher achievement levels. Other research concurs with these findings and suggests attendance and classroom size as additional influencing factors (Bradford, 1993; Branscomb, 1987; Freed, 1987; New York State Department of Education, 1989; Scott, 1990).

Current research has neglected factors such as teacher achievement and personality as well as other qualitative, intangible relationships which may have tremendous influence on student retention and achievement levels. Such a study would be of value to systems, not only in the state of Virginia, but also throughout the nation, as administrators seek new and innovative methods of keeping students in school. Therefore, the research hypotheses are stated as follows:

In four regions of the state of Virginia:

H_{o1}: The level of education a public school teacher attains

does not affect the dropout rate.

H_{o2}: The level of education a public school teacher attains does not affect the nuber of graduates continuing education.

Method

Subjects

The 134 school systems in the state of Virginia used in this study were identified in the September 1993 edition of Virginia's Educational Disparities. The total instructional personnel with postgraduate certification in each of these systems included in its numbers principals, assistant principals, teachers, supervisory and supportive personnel. The student population was taken from figures provided for numbers of dropouts in grades 7-12 and numbers of graduates continuing their education for each system in the state. Student figures included those students who graduated in Summer 1992. All figures were for the 1991-1992 school year.

Design

The 134 school systems in the state of Virginia were divided into four groups representing the Northeast, Northwest, Southeast, and Southwest geographical divisions of the state as assigned by the researchers. Each division consisted of approximately 27-32 systems

with the exception of the Southeast which was larger with 39 systems due to the large number of urban systems in Virginia Beach, Hampton, and Norfolk.

Procedure

Figures provided for total instructional personnel with postgraduate certification were determined by using the following numbers for each school system: (1) 1991-92 End-of-Year Student Average Daily Membership, (2) 1991-92 Instructional Personnel Positions per 1,000 Students in ADM, and (3) 1991-92 Instructional Personnel--Percent Holding Postgraduate Professional Certificates. End-of-year student ADM was divided by 1,000. The resulting figure was multiplied by the instructional personnel positions per 1,000 students in ADM to achieve a total number of instructional personnel in each system. This total was then multiplied by the percentage of instructional personnel holding postgraduate professional certificates to acquire the total number of instructional personnel holding postgraduate professional certificates. The result of this calculation was then compared with the Number of Graduates Continuing Education and with the Number of Dropouts Grades 7-12.

Data Analysis

In this causal-comparative study chi-square tests at .05 level of significance were run using (1) total instructional personnel with postgraduate certificates and number of dropouts grades 7-12, and (2) total instructional personnel with postgraduate certificates and number of graduates continuing education. To provide more manageable groups, the Total Instructional Personnel variable was divided into eight groups, those systems with <=100, <=250, <=500, <=750, <=1000, <=2500, <=5000, <=7500; and the Dropouts and Graduates Continuing Education variables were divided into eight groups, those with <=50, <=100, <=250, <=500, <=750, <=1000, <=2500, <=5000.

Results

A chi-square was run for each geographic location to compare total instructional personnel with postgraduate certification and number of dropouts. A second chi-square for each geographic location compared total personnel with postgraduate certification and number of graduates continuing education. Chi-square test of homogeneity (independence) was chosen to compare nominal data with nominal data. In each test, chi-square exceeded the critical value significantly

(see Table 1). Therefore, the original hypotheses that "the level of education a public school teacher attains does not affect the dropout rate," and "the level of education a public school teacher attains does not affect the number of graduates continuing education" were not supported.

Discussion

The results of this study reject the original hypotheses. The level of education public school teachers attain does affect the dropout rate as well as the number of graduates continuing education. The results were statistically significant and may be generally applicable in all school systems nationwide.

School systems are under enormous pressure to be accountable for the number of students that complete high school and go on to college. Many factors contribute to a student's success in the classroom; some factors are under the control of the system administrators while others are not. Those factors that are within the scope of the administration need to be addressed whenever possible. One factor that falls into this category is the hiring of teachers who hold advanced degrees or those who intend to pursue those degrees. School systems and administrators who seek to ensure employment of

quality teachers would be wise to include questions designed to discover the prospective employee's plans and goals for his/her own educational advancement as well as his/her personal philosophy of lifelong learning.

It is probable that teachers who continue their own education are more likely to view teaching as a "profession" or "calling" rather than simply as a "job." The values these teachers exhibit concerning the importance of lifelong learning will be passed on to their students both directly through their personal examples and indirectly through their teaching methods. It is in this way that teachers may impact the views and beliefs of their students, encouraging them to continue their own educations and become lifelong learners themselves.

The results of this study are valuable for educators who are seeking to reform their school systems. It is especially important for those who are involved in personnel selection and improving student attrition rates. Since there is a dearth of literature in this area, more research should be conducted in a variety of settings to substantiate these findings.

Table 1

Chi-Square, Critical Value, and Degrees of Freedom for Four Geographic Regions

Geographic Location	# Inst. Personnel w/ Postgrad. Certif. and # Dropouts			# Inst. Personnel w/ Postgrad. Certif. and # Grads. Continuing Education		
	df	χ^2	χ^2_{α}	df	χ^2	χ^2_{α}
Northeast	25	93.22	37.65	30	102.54	43.77
Northwest	4	12.61	9.49	5	38.87	15.51
Southeast	30	96.91	43.77	35	109.69	6.51
Southwest	6	26.19	12.59	5	26.11	15.51

* ALL FIGURES COMPUTED AT A <.05

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